Traction battery charger
HWC4 Series
User Manual

Instruction

♦ Packing list

Name	Charger	Brochure
Amount	1	1

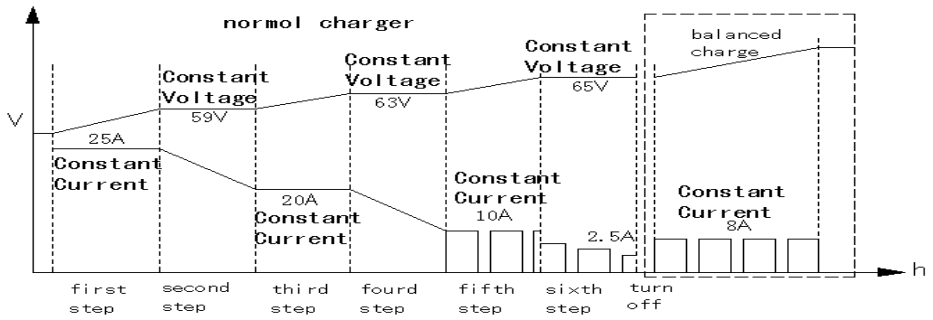
♦ technical parameters

Dimensions (Input 220Vac) ： 291mm(L)×210mm(W)×120mm(H).
Dimensions (Input 110Vac) ： 337mm(L)×210mm(W)×120mm(H).
Input frequency ： 50/60HZ Operating temperature：-10℃—+40℃
Efficiency ： ≥86%

TYPE	**INPUT** (ACV)	**BATTERY VOLTAGE**	**O/P CURRENT**	**BATTERY** (AH)	**POWER** (KW)	**Weight** (Kg)
HWC4-2440A	220	24	40	320	1.4	5.7
HWC4-3630A	220	36	30	240	1.5	5.7
HWC4-4825A	220	48	25	200	1.7	5.7
HWC4-4830A	220	48	30	240	2	5.7
HWC4-4835A	220	48	35	280	2.4	5.7
HWC4-6025A	220	60	25	200	2.1	5.7
HWC4-6030A	220	60	30	240	2.5	5.7
HWC4-6035A	220	60	35	280	3	5.7
HWC4-7225A	220	72	25	200	2.5	5.7
HWC4-7230A	220	72	30	240	3.1	5.7
HWC4-7235A	220	72	35	280	3.5	5.7
HWC4-7220A	110	72	20	160	2.1	7.9
HWC4-7225A	110	72	25	200	2.7	7.9
HWC4-7230A	110	72	30	240	3.1	7.9
HWC4-9615A	110	96	15	120	2.1	5.7
HWC4-9625A	220	96	25	200	3.5	5.7
HWC4-12020A	220	120	20	160	3.5	5.7
HWC4-14415A	220	144	15	120	3.1	5.7

♦ Working principle

★ **Charger model sheet** ★



First step ： Charges constantly in the maximum current

Second step ： When voltage rise to first section of constant voltage setting value, enters the second section of constant voltage charge, this time electric current automatic drop

Third step ： When the current drops to the maximum current one half, enters the third section of constant current charge

Fourth step： When voltage rise to fourth section of constant voltage setting value, enters the fourth section of constant voltage charge, this time the current gradually drops

Fifth step： When the current drops to the third section of constant current value one the half then enters the fifth section of constant current charge, this time the voltage unceasingly rises.

Sixth step： When can accept the voltage rise to the battery when highest voltage then entered the sixth section of constant voltage to charge, This time the voltage throughout is constant in this value. Along with the duration of charging extension, imitates enters the battery capacity to increase unceasingly, the electric current can reduce gradually, When battery charger to battery charging current ≤ hypothesis fill close-down magnitude of current, The battery charger auto-stop, no output. this battery charger also has the fixed time close-down function, prevented the battery excessively is sufficient.

Balanced charge： In the choice of a balanced charge, when the normal charge after the end of automatically charging balance, the current 8 A constant in about five minutes to stop charging 20 seconds to charge the battery charging pulse. In a balanced charging to 1-2 hours per charge a battery electrolyte testing until the electrolyte density reached 1.280 ±0.005g/cm3 (25 ℃) if the density in excess of the value can be added distilled water, density adjusted to charge 0.5 - 1 hour, so that the electrolyte density, single-grid electrolyte density difference of not more than 0.01 g/cm3, charging the power switch off the end of a balanced charge.

When balanced charging, in order to prevent users forget to close machines, resulting in long balanced rechargeable battery cell damage caused by the special design of the

machine regularly charging function when the balance continued to charge 12 hours a balanced machine shut down automatically. If didn't completed balanced rechargeable battery, can do a cycle. (See Section 7 balanced charge note)

Features

(1)Input over current protection;
(2)Output short protection;
(3)Battery reversed connect protection;
(4)System over temperature protection;
(5)Automatically turn off when battery is full;
(6)Time Turn off;
(7)Charge automatically when the voltage down;
(8)Battery auto-detect;
(9)The charge process controlled by CPU.

Connect line method

OUTPUT ： Red line is anode, black line is cathode.

Security guide

(1)Warning: caution the users for dangerous operation
(2)Attention: remind the users of important operation
(3)Please don't open the charger to repair or debug yourself
(4)Please don't change power supply wire by yourself
(5)AC power supply meets three cores cable which links earth wire.
(6)Be sure install earth wire correctly
(7)Please don't leave the charger in drenching place
(8)Plug of DC meets socket tightly. If broken or moveable, change it
(9)Cut off power supply when unmoral sound or odor presenting. Please contact our company, we would at most the in a short time solves for you
(10)Please don't length or change the output wire
(11)Please don't plug up airway of the charger
(12)Cut off power supply and charging plug when moving the charger
(13)Voltage of battery must accord with the labeled voltage on the charger's nameplate
(14)To avoid damaging wire, don't pull, wave it

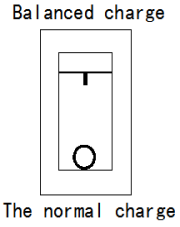
♦ Operation Bound

The charger only matches with lead-acid batteries or maintenance-free.
Total voltage: single one is 2V, or 6V forms battery combination.
Charger can't be used for different voltage.
Divide up voltage according to standard battery combination. Follow the cable.

Fox example: The charger of 48V can't charge for 24V battery

Light on means output reversed connect
Light on means charger, battery supply Has met
Light on means charger machines temperature ≥ 75℃, the charger will automatically shut down when the temperature is less than 75 ℃ will automatically boot
Light on means indicated the battery charger enters the normal charge condition.
Light on means indicated the charge already entered third section of constant flow charge condition
Light on means recharging has completed.
When the charge into the balance when the lights flashing

Trouble shooting guide



Will switch to the normal charge, the charger in a normal charge; will switch to the balanced charge, the charger in a normal pre-charge state. When the end of the normal charge will automatically turn into a balanced charge
(First choice of charging method, and then open the power switch)

If the charger couldn't work normally, please read the following before calling for maintenance.

Trouble phenomenons	Cause analysis	Resolve methods
Batteries are too hot, and bubbling	Some damages existed in batteries	Check the batteries, And alternate the Damaged batteries
Sub-voltage of batteries after Completely charged.	The batteries are too old.	Alternate the batteries
	Output wire was longer than 5 meters, which causes large voltage drop on the wire.	Shorten the output wire to standard length of three meters
Switch on to be filled with a light namely bright	Turn on the power and connect to the battery properly	Connect line correctly

Please contact our company, if the charger still couldn't work after checking according to the above-mentioned.

Attention

Routine maintenance:

1, should be placed on security, ventilation and dust-free, no rain working environment.

2, charging no-open the case

3, AC power to choose grounding line with the three-core cable, and the correct installation of grounding;

4, non-electrical staff, is prohibited open the case.

5, long-term non-use of packaging when stored

6. If any problems please contact with our dealer or service department，

NOTES:

a) charging a balanced note

For use in the following cases must be balanced charge:

1, the normal monthly charge under a balanced charge;

2, did not promptly discharge after charging, or discharge current excessive;

3, rechargeable batteries are inadequate or backward;

4, single battery discharge termination voltage is lower than 1.75 V or 1.8 V less than three times or more

b) **Warning:**

Do not solid battery on a balanced handling charge, only liquid batteries only need to deal with this.

Balance is a sufficient lead-acid batteries in electric, battery charging excessive operation, it can prevent the cell layer and sulfate, the sulfate layer and will shorten the life of the battery

Peculiar Function

- **Output line lengthen**

  When the distance between traction battery and charger is far away (over 5meters), please order output wire lengthened in advance .

  Measure the distance correctly.

The warranty doesn’t cover repairs as the result of the following:

1、Damage caused by wrong operation**.**

2、Damage caused by opening the charger and without company permission.

3、Damage caused by transiting.

4、Damage caused by entering water, damping.

5、Damage caused by instant super-voltage.

6、Damage caused by pulling of pushing the input/output cable severely.

7、Lengthening the input/output cable without permission causes that the Charger can’t recharge fully.

contact way

Email : Support@KellyController.com

sales@KellyController.com

Website : www.KellyController.com

Kelly Controls, LLC